

### III. CLAIMS

1. (Currently Amended) A method for application-specific quality of service optimization, ~~in which method~~ comprising the steps of:

optimizing the processing of data streams coming from said ~~an~~ application ~~is optimized in nodes (2a, 2b, 2c, 2d) between a sender (1a) and a receiver (1b) in a communication network,~~

~~using in which communication network~~ at least one quality of service signalling protocol ~~is used in~~ the communication network,  
~~characterized in that~~

causing the use of ~~the application uses~~ said at least one quality of service signalling protocol by said application to mark application-specific data streams,

identifying at ~~wherein the nodes (2a, 2b, 2c, 2d) of the communication network identify,~~ on the basis of the quality of service signalling, packets ~~(3) belonging to the data stream of said application, and their~~ the type of said packets,

subjecting ~~wherein these~~ said packets ~~(3) are subjected to optimization methods characteristic to this~~ said type.

2. (Currently Amended) The method according to claim 1, ~~in which method~~ further comprising the step of transmitting packets (3) of at least one type are transmitted in the communication network,  
~~characterized in that~~ wherein said signalling protocol used is a quality of service signalling protocol ~~which comprises~~ comprising a description of the type of the packets.

3. (Currently Amended) The method according to claim 1, further comprising the step of optimizing the quality of service is optimized, characterized in that wherein the signalling protocol used is a quality of service signalling protocol ~~which comprises~~ comprising parameters required in optimizations.

4. (Currently Amended) The method according to claim 1, ~~characterized in that~~ further comprising the step of using application-specific ~~signalling optimization is used for~~ optimization of a data stream of a real-time application in the nodes ~~(2a, 2b, 2c, 2d)~~ in the communication network.

5. (Currently Amended) The method according to claim 4, ~~characterized in that~~ wherein application-specific optimization is used for optimization of an RTP stream ~~(6)~~.

6. (Currently Amended) The method according to claim 1, ~~characterized in that~~ setting up by the application sets up, by means of signalling messages ~~(4, 5)~~ of the signalling protocol, an optimized path between the sender ~~(1a)~~ and the receiver ~~(1b)~~ for a data stream ~~(6)~~ of the application, ~~wherein the~~ and reserving the optimized quality of service required by ~~the said~~ application is reserved at each node ~~(2a, 2b, 2c, 2d)~~ of the communication network.

7. (Currently Amended) The method according to claim 6, ~~characterized in that~~ wherein the signalling protocol used is the RSVP, and wherein ~~Path (4), Resv (5) and ResvConf~~ messages are used to reserve ~~an said~~ optimized path for the data stream ~~(6)~~ of the application between the sender ~~(1a)~~ and the receiver ~~(1b)~~.

8. (Currently Amended) The method according to claim 1, in further comprising the steps of:

~~which method wherein transmitting the packets by the application transmits packets (3), characterized in that;~~

supplementing, by the application supplements the packet (3) to be transmitted with a signalling message (9),

performing signalling on the basis of which eachby said reached node (2a, 2b, 2c) of the communication network on the basis of said signalling message can perform signalling.

9. (Currently Amended) The method according to claim 8, ~~characterized in that wherein the signalling protocol used is DiffServ, and wherein the signalling message (9) is conveyed with the packet (3) itself in the DS field (22) of the packet, in the IP header (10), and performing optimization by means of which eachby said reached node (2a, 2b, 2c) of the communication network by means of said signally message can perform optimization.~~

10. (Currently Amended) A quality of service signalling protocol which is arranged to transmit signalling messages to nodes ~~(2a, 2b, 2c, 2d)~~ in a communication network ~~and which wherein the~~ quality of service signalling protocol comprises means for marking a data stream of a certain application, means for transmitting the type of said data stream, and means for transmitting optimization parameters, ~~characterized in that wherein the~~ quality of service signalling protocol is arranged to mark the data streams belonging to said application for the nodes

~~{2a, 2b, 2c, 2d}~~ of the communication network, and wherein ~~these~~  
said nodes ~~{2a, 2b, 2c, 2d}~~ of the communication network are  
arranged to identify ~~these~~ said data streams and to use optimi-  
zation methods characteristic to each type for ~~these~~ said data  
streams.

11.(New) The method according to claim 1, wherein the step  
of subjecting said packets to optimization methods uses RTP  
header compression in said nodes.

12.(New) The method, according to claim 11, wherein said nodes is  
other than said sender, said receiver, or the node preceding said  
receiver.

13. (New) The method according to claim 11, wherein said node is  
a router.

14.(New) The method according to claim 1, wherein the step  
of subjecting said packets to optimization methods uses  
multiplexing of said data streams in said nodes for optimization.

15.(New) The method, according to claim 14, wherein said nodes is  
other than said sender, said receiver, or the node preceding said  
receiver.

16. (New) The method according to claim 14, wherein said node is  
a router.